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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,387

09/01/2005

Shigeaki Furukawa

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EXAMINER

PATANKAR, ANEETA V

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,387	<b>Applicant(s)</b> FURUKAWA ET AL.	
	<b>Examiner</b> Aneeta Patankar	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/17/2008, 04/15/2005</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 4-7, and 10-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5841753 to *Holtslag et al.* in view of U.S. Patent No. 5,414,451 to *Sugiyama et al.* in further view of U.S. Patent Pub. No. 20020150005 A1 to *Nishiuchi*.

As to **claim 1**, *Holtslag* discloses a method of reproducing information from a multilayer recording medium including at least three information layers (103,104,105), the method of reproducing comprising: converging a laser beam output from a light source onto a target information layer of the multilayer recording medium (Fig. 6, column 19, lines 20-27); detecting, as reflected light, light that is reflected from the target information layer (103,104,105) as a result of the laser beam converged onto the target information layer, and generating mainly to generate an information signal from the detected reflected light (Fig. 6, column 19, lines 27-38), where element 116 is the detection system; detecting as a cross talk light, light that is reflected from information layers other than the target information layer as a result of the laser beam that is output from the light source and converged onto the target information layer, and generating to

generate a cross talk signal from the detected cross talk light (Fig. 7 and 8, column 22, lines 13-19), where  $S_r$  is a crosstalk signal and elements 130 and 131 are detectors; reading a predetermined information from the multilayer recording medium (Fig. 5, column 17, lines 52-53), reading light that leaks leaking from the information layers other than the target information layer into to a reflected the reflected light, that is reflected from the target information layer (Fig. 7-9, column 22, lines 28-32), where detection systems 130 and 131 detect the crosstalk between the information layers of element 102; and removing the amplified cross talk signal from the information signal generated from the reflected light that is reflected from the target information layer to generate a reproduction signal indicating information recorded onto the target information layer (Fig. 7-10, column 22, lines 36-43), where changing the power of the beam reduces the crosstalk.

*Holtslag* is deficient in disclosing a method of reproducing information from a multilayer recording medium including at least three information layers, the method of reproducing comprising: predetermined information indicating a ratio of the cross talk light, determining adjusting a gain to be applied to the generated cross talk signal based on the read predetermined information; amplifying the generated cross talk signal based on the determined gain.

However, *Sugiyama* discloses a method of reproducing information from a multilayer recording medium including at least three information layers, the

method of reproducing comprising: predetermined information indicating a ratio of the cross talk light (Fig. 27, columns 19-20, lines 68-5).

*Holtslag* is deficient in disclosing determining adjusting a gain to be applied to the generated cross talk signal based on the read predetermined information; amplifying the generated cross talk signal based on the determined gain.

Furthermore, *Nishiuchi* discloses determining adjusting a gain to be applied to the generated cross talk signal based on the read predetermined information (Fig. 1, paragraph 0071), where gain setting section 7 sets the gain of the focusing control to compensate for reflection between the optical layers or crosstalk; amplifying the generated cross talk signal based on the determined gain (Fig. 2A and 2B, paragraphs 0093-0096), where amplifier 44 and 45 amplify the light detected onto 13a-13d from layers 226 and 228.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to have created a method of reproducing information from a multilayer recording medium that comprises reading predetermined information from the multilayer recording medium as taught by *Holtslag* and the predetermined information including the ratio of crosstalk as modified by *Sugiyama*. The suggestion/motivation would have been in order to perform servo control to properly focus the light onto the recording medium (*Sugiyama*, column 22, lines 9-17). Furthermore, it would have been obvious to a person of ordinary skilled in the art to have modified the method of reading predetermined

information from a multilayer recording medium as taught by *Holtslag* and *Sugiyama* by adjusting a gain to be applied to the generated crosstalk signal as modified by *Nishiuchi*. The suggestion/motivation would have been in order to perform tracking control (*Nishiuchi*, paragraph 0101).

As to **claim 4**, *Holtslag* discloses the method of reproducing method, wherein the predetermined information includes reflectance information and transmittance information for each of the other information layers (103,104,105) (Fig. 6, column 19, lines 6-13) to which having a laser beam is irradiated thereon from a surface of another information layer the layer that is opposite to a light source (Fig. 6, column 19, lines 21-27), where layer 105 is on the opposite side from the light source.

As to **claim 5**, *Holtslag* discloses the method of reproducing wherein, when the multilayer recording medium includes three information layers (103,104,105) (Fig. 6, column 19, lines 7-10), the predetermined information includes reflectance information and transmittance information regarding two of the three information layers (Fig. 6, column 19, lines 10-13), where 2 of the 3 layers (103 and 104) have both reflectance and transmittance information.

As to **claim 6**, *Holtslag* discloses the method of reproducing, wherein the cross talk signal includes a signal that is reflected from a second information layer reflected from the target information layer on the light source side (Fig. 6, column 22, lines 13-19), where the crosstalk signal is  $S_f$  and crosstalk is

occurring in all layers, including the second layer, which is an unscanned layer in this case.

As to **claim 7**, *Holtslag* discloses a reproducing device for reproducing information from a multilayer recording medium comprising including at least three information layers, the reproducing device comprising: a light source operable to irradiate a laser beam (112) onto one information layer (103,104,105), as a target information layer (Fig. 6, column 19, lines 20-27), for reading information recorded onto the multilayer recording medium (Fig. 5, column 17, lines 52-53); a first detector operable to detect, as reflected light, light that is reflected from the target information layer and mainly to generate an information signal from the detected reflected light (Fig. 6, column 22, lines 13-22), where element 130 is the first detector to detect reflected light and  $S_r$  is a crosstalk information signal; a second detector operable to detect, as cross talk light, light that is reflected from information layers other than the target information layer as a result of the laser beam that is output from the light source and irradiated onto the target information layer, and generate a cross talk signal from the cross talk light detected by the second detector (Fig. 6, column 22, lines 13-22), where element 131 is the second detector and the unscanned layers are layers that are not the target layer; a cross talk detector (116) operable to read cross talk information from a management area of the multilayer recording medium (Fig. 6, column 19, lines 27-29); light that leaks leaking from a light source side of the-ot4a~ information layers other than the target information layer

into on the light source side to a the reflected light, that is reflected from the target information layer (Fig. 7, 8 and 9, column 22, lines 28-32), where the detection systems 130 and 131 detect the crosstalk between the information layers of 102; and a reproducing signal indicating information recorded onto the target information layer (Fig. 3, column 16, lines 15-28), where the scanning focus is the reproduction signal and the recording layer is the target information layer.

*Holtslag* is deficient in disclosing a reproducing device for reproducing information from a multilayer recording medium comprising including at least three information layers, the reproducing device comprising: the cross talk information indicating a ratio of the cross talk; an amplifier operable to determine a gain to be applied to the cross talk signal from the second detector based on the read cross talk information, and amplify the cross talk signal based on the determined gain; and a differentiating unit operable to obtain a difference between the information signal generated by the first detector and the cross talk signal amplified by the amplifier, and generate, based on the obtained difference.

However, *Sugiyama* discloses a reproducing device for reproducing information from a multilayer recording medium comprising including at least three information layers, the reproducing device comprising: the cross talk information indicating a ratio of the cross talk (Fig. 27, columns 19-20, lines 68-5).



Furthermore, *Nishiuchi* discloses an amplifier operable to determine a gain to be applied to the cross talk signal from the second detector (13) based on the read cross talk information, and amplify the cross talk signal based on the determined gain (Fig. 2A and 2B, paragraph 0098), where the focusing signals F+ and F- that were generated from amplifiers 44 and 45 are used in adjusting the reflected light from non-target areas, or adjust the crosstalk; and a differentiating unit (31) operable to obtain a difference between the information signal generated by the first detector and the cross talk signal amplified by the amplifier, and generate, based on the obtained difference (Fig. 3, paragraph 0103), where focus error signal 31s is the difference between the information signal and the amplified cross talk signal (F+ and F-). In addition, the same motivation is used as the rejection in claim 1.

As to **claim 10**, *Holtslag* discloses the reproducing device, wherein the second detector surrounds the first detector (Fig. 6, column 22, lines 28-32), where 116 is a detection system and 131 and 130 are the detectors. They surround each other as shown in the figure.

As to **claim 11**, *Holtstag* discloses a multilayer recording medium comprising at least three information layers and being irradiated with a laser beam from a light source to reproduce information, the multilayer recording medium comprising: light, that leaks from a light source side of each information layer other than a specific information layer of the multilayer recording medium into the side of the light source to a reflected light that is reflected from the specific information layer during reproduction of information from the specific information layer (Fig. 7-9, column 22, lines 28-32), where the detection systems 130 and 131 detect the crosstalk between the information layers of 102.

*Holtstag* is deficient in disclosing a multilayer recording medium comprising at least three information layers and being irradiated with a laser beam from a light source to reproduce information, the multilayer recording medium comprising: a management region that stores cross talk information indicating a ratio of a cross talk.

However, *Sugiyama* discloses a multilayer recording medium comprising at least three information layers and being irradiated with a laser beam from a light source to reproduce information, the multilayer recording medium comprising: a ratio of cross talk (Fig. 27, columns 19-20, lines 68-5).

Furthermore, *Nishiuchi* discloses a multilayer recording medium comprising at least three information layers and being irradiated with a laser beam from a light source to reproduce information, the multilayer recording medium comprising: a management region that stores cross talk information (Fig. 9, paragraph 0145).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to have created a crosstalk detector for an optical recording medium that has three information as taught by *Holtslag* and a crosstalk ratio as modified by *Sugiyama*. The suggestion/motivation would have been in order to be able to reduce crosstalk (*Sugiyama*, Fig. 1, column 15, lines 3-8), where the S/N ratio is the crosstalk ratio. Furthermore, it would have been obvious to a person of ordinary skill in the art to have modified a crosstalk detector for an optical recording medium that has three information layers as taught by *Holtslag* and *Sugiyama* and a management region that stores crosstalk information as taught by *Nishiuchi*. The suggestion/motivation would have been in order to be able to store test signals with crosstalk information which are needed in correcting the servo gain signal with respect to the crosstalk information (*Nishiuchi*, paragraphs 0007-0009, 0145, Fig. 11, paragraph 0149).

As to **claim 12**, *Holtslag* discloses the multilayer recording medium, wherein thicknesses of a plurality of middle layers arranged between the plurality of information layers to isolate the plurality of information layers are substantially equal (Fig. 6, column 19, lines 7-10), where elements 106 and 107 are the middle layers or spacers that separate the information layers.

As to **claim 13**, *Holtslag* discloses the multilayer recording medium, wherein the cross talk information includes reflectance information of each of the other information layers (103,104,105) (Fig. 6, column 19, lines 6-13) when a laser beam is applied thereto from a surface of another information layer that is opposite to an incident side of the light source (Fig. 6, column 19, lines 21-27), where layer 105 is on the opposite side from the light source.

As to **claim 14**, *Holtslag* is deficient in disclosing the information medium wherein the management region is provided on one information layer and information is not recorded onto a region of the other information layers, corresponding to the management region.

However, *Nishiuchi* discloses the information medium wherein the management region is provided on one information layer and information is not recorded onto a region of the other information layers, corresponding to the management region (Fig. 9, paragraph 0145). In addition, the same motivation is used as the rejection in claim 11.

As to **claim 15**, *Holtslag* is deficient in disclosing the information medium, wherein the management region is provided on an information layer that is closest to the light source in relation to the other information layers.

However, *Nishiuchi* discloses the information medium, wherein the management region is provided on an information layer that is closest to the light source in relation to the other information layers (Fig. 9, paragraph 0145), where the diagram shows light beam 27 being closest to the management area. In addition, the same motivation is used as the rejection in claim 11.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 4-7, and 10-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aneeta Patankar whose telephone number is (571) 272-9773. The examiner can normally be reached on Monday-Thursday 8-5, Second Friday, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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